CHAPTER I

INTRODUCTION

1.1. Background

Learning biology is required of learning experience from students. The result of learning is the ability of the student after receiving a learning experience (Sudjana, 2008). This experience is really needed by students to achieve the learning outcomes in accordance naturally with biology as a science. The success of the learning process conducted by the teacher can be seen from the student's learning outcome. International survey of TIMSS (Trends in International Mathematics and Science Study) in 2007 stated that Indonesia was ranked 35 out of 49 countries in the field of science with a score far below from international average of 500, with an average score obtained is 427 (Litbang Kemendikbud, 2011). The results of PISA (Programme for International Student Assessment) in 2009 also revealed that the ability of students' scientific literacy Indonesia was ranked 60 out of 65 countries with an average score obtained is 383.

The low of student's learning outcomes are caused by several factors, they are: (1) Teaching and learning process are still teacher centered (Chotimah, 2007; Sulastri, 2009), (2) Model and method used by teacher are not varied and tend to use conventional method (Arahim, 2006; Ghazi, 2003; Oleyede, 2011) (3) Students tend to memorize than to understand the concept so makes them easily to forget the subject matters (Yusuf, 2006).

Wijyanti *et al.*(2013) also revealed student's learning outcome in control class is still low. It is shown at the time of the third meeting that students have difficulties when they did the evaluation test. From calculation of the researchers, the results of study in control class has an average value is lower than the experimental class on aspects of cognitive (58.54), psychomotor (51.67), and affective (62.08).

Adlini (2013) stated that in learning using Direct Instruction model which is implemented in SMA N 1 Tebing Tinggi, students tend to be more passive though there are some students who sometimes want to ask the teacher. Students

are less enthusiastic in the learning process and student's learning outcome is still low. The mean of student's activity in control class which is taught with Direct Instruction model was 14.85% if it is compared with experimental class was 62.03%. Result of study also shown the different of student's cognitive learning outcome in control class which is obtained from the post-test I was 84.15 is lower than experimental class was 88.03.

Based on observation in SMA N 3 Medan which done by researcher on 11th February 2015, particularly in X grade, one of problems on biology learning are teacher centered. Students were listening to the teacher talk continuously for a certain time during the learning process and made them less active and tend to become bored. They became unfocuse and their minds drifted everywhere while students without thinking can listen to an average of 400-500 words per minute (Silberman, 2009). The teacher guided students to begin presentation in class. Most students did not focus to pay attention and to understand the explanation that was given by their friend when presentations per group were being held. There was less of asking and less of giving opinion. Most of them did not write the point of presentation and teachers' explanation. Class circumstance was not conducive and the process of transferring information by the method of group presentation was not optimal.

Result of in-depth interview also was done by researcher on 11th February 2015with biology teacher who taught in X grade of SMA N 3 Medan. The teacher stated that most students were not familiar with some concepts of biology. Students' learning was more likely to memorize the concepts rather than trying to understand and finding the concept of biology, and students are less active on biology learning. Many of them think that some of biology concept was not fun to learn because it was full of recitation and difficult to learn. This statement also strengthened by Ozcan*et al.* (2013), stated that biology concepts are difficult to learn because they are long, complicated, includes many details, and depend on memorizing. Eventually, made students become less excited and bored because lack of understanding.

Type of students' learning also affects their learning outcome and it also depends on teachers' ability to generate students' enthusiastic provides opportunity for students to learn on their own or do activities is effective to improve their activity when learning process in the class (Hamalik 2007). Paul B. Diedrich (Hamalik, 2007) stated that activity is the important thing which can make students actively engage on learning process such as visual activity, oral activity, listening activity, and mental activity. These activities need learning strategy that oriented to the learning approach of students. Learning approach and learning strategy determine the success rate of the learning process. Learning strategy refers to the behaviors and thought processes used by students that influence what is learned, including memory and metacognitive process (Arends, 2009). Besides, subject matters of biology need students' involvement actively because relate to real objects in daily environment (Wendraningrum*et al.*, 2014).

SAVI is learning approach which is consisted of four components; Somatic is learning by moving and doing, Auditoryis learning by talking and hearing, Visualis learning by observing and picturing, and Intellectualis learning by problem solving and reflecting, so all this components must present and integrated to do optimization on learning process (Meier, 2000). SAVI approach is effectively implemented to students and can improve students' activity and learning outcome in biology learning (Elina, 2009; Mustikasari, 2012) particularly in biodiversity topic (Wendraningrum, 2014). Lindawati (2009) stated that effect of SAVI approach on Mathematics learning also can improve students' activity with percentage is 67.45%.

Sutrisno (2013) stated that SAVI approach through cooperative learning model is able to generate better learning achievement for student. The effect of SAVI approach through cooperative learning model also has been proven by Wijayanti, Prayitno, and Marjono (2013). They stated that SAVI approach through cooperative learning model gave influence on student's learning outcomes. This could be occurred because in this approach has developed student's sense, intellectual, and social skills optimally.

Arends (2009) revealed that cooperative learning strategies is excel to help students to understand the concepts and also to courage students in ability of collaboration, critical thinking and develop student's social attitude. Armstrong (2007) research results indicated that cooperative learning can help students improve their knowledge on biological materials.Use of Jigsaw is more successful in mastering the concept compared to Direct Instruction model (Kilic, 2008). Jigsaw makes students are able to connect their existing knowledge with new knowledge gained and discuss with their friends in group through the process of cooperative learning. It is easier for students to master concepts that have built together (Kuswardhani, 2011).

Based on the background above, researcher needs to conduct research by using learning approach through cooperative learning modelto actively engage students during the learning process through cooperation in a team.

1.2. Problem identification

Problems were found relate to student's mastery still low on ecosystem topic which has been caused by:

1. Most teachers use conventional approach on learning process
2. Students are difficult to understand and to memorize the biology concept
3. Student's activity and learning outcome are still low
4. There is less variation of learning model
5. Learning model design has not involved students actively so that students to be less excited and bored.

1.3. Problem Scope

According to background and problem identification which have been described before, so this research is limited on:

1. The treatments of research used SAVI approach and Jigsaw cooperative learning model for experimental class and Direct Instruction model for control class
2. Aspects measurable are student's activity and learning outcome.

1.4. Research Question

Focus on the background, the problem questions are:

1. Is there significant effect of learning model (SAVI in Jigsaw) on student's activity?

2. Is there significant effect of learning model (SAVI in Jigsaw) on student's learning outcome?

1.5. Research Objectives

The aim of this research is to know:

1. The effect of learning model (SAVI in Jigsaw) on student's activity

2. The effect of learning model (SAVI in Jigsaw) on student's learning outcome.

1.6. Research Contribution

This result of research is expected to be useful both theoretically and practically:

Theoretically

1. This result of research can be used as study material of similar research on biology learning in senior high school

2. This result of research can be used as strengthening of theory on SAVI approach and Jigsaw cooperative learning model to improve student's activity and learning outcome.

Practically

1. Teacher can modify this research to do innovation on biology learning in senior high school

2. Students obtain useful learning experience to enhance their activity and learning outcome on biology learning

3. School can be research information to encourage biology teacher to do learning innovation.